

CLAIMS

1. A multifunctional synthetic bioabsorbable device comprising a synthetic bioabsorbable polymeric matrix and additive agent in the form of pharmacological agent, **characterized** in that cavities induced around the particles of the additive agent dispersed in said matrix exist in said matrix as a result of mechanical processing of the mixture of the matrix and said particles.
- 10 2. A multifunctional synthetic bioabsorbable device of claim 1 especially for wound closure, **characterized** in that it has reduced modulus and increased elasticity because of the cavitated spindle-shaped or oval-shaped porous structure resulting from the processing of said mixture.
- 15 3. The multifunctional device of claim 1, **characterized** in that the device is a suture, fiber, thread, cord, wire, or any derivative of these.
- 20 4. The multifunctional device of claim 3, **characterized** in that the device is a mesh.
- 25 5. The multifunctional device of claim 4, **characterized** in that the device is a mesh comprising fibers of differing bioabsorbable properties, such as absorbable multifunctional fibres of claim 1, and non-bioabsorbable fibres, or fibres of differing bioabsorbtion rates .
- 30 6. The multifunctional device of any of the preceding claims, **characterized** in that the additive agent is an antibiotic.
- 35 7. The multifunctional device of any of the preceding claims, **characterized** in that said additive agent comprises 0.01 to 50 wt-% preferably 1-10 wt-% of the weight of the said multifunctional device.
8. The multifunctional device of claim 3, 4, 5, 6 or 7, **characterized** in that the said multifunctional device is monofilamentous in its structure.

24

9. The multifunctional device of claim 3, 4, 5, 6 or 7, **characterized** in that the said multifunctional device is multifilamentous in its structure.
- 5 10. The multifunctional device of any of the preceding claims, **characterized** in that the said multifunctional device has a drug releasing function effective to inhibit bacterial attachment and biofilm formation.
- 10 11. The multifunctional device of any of the preceding claims, **characterized** in that it is made by melt or solution processing technique, such as compounding with twin-screw extruder, and subsequent processing method, such as fibre spinning.